

Spaceport News

America's gateway to the universe. Leading the world in preparing and launching missions to Earth and beyond.

John F. Kennedy Space Center



The Space Shuttle Atlantis on mission STS-43 streaks skyward as sunlight peers through the orbiter and external tank.

International Space Station Assembly Flight Dates Adjusted

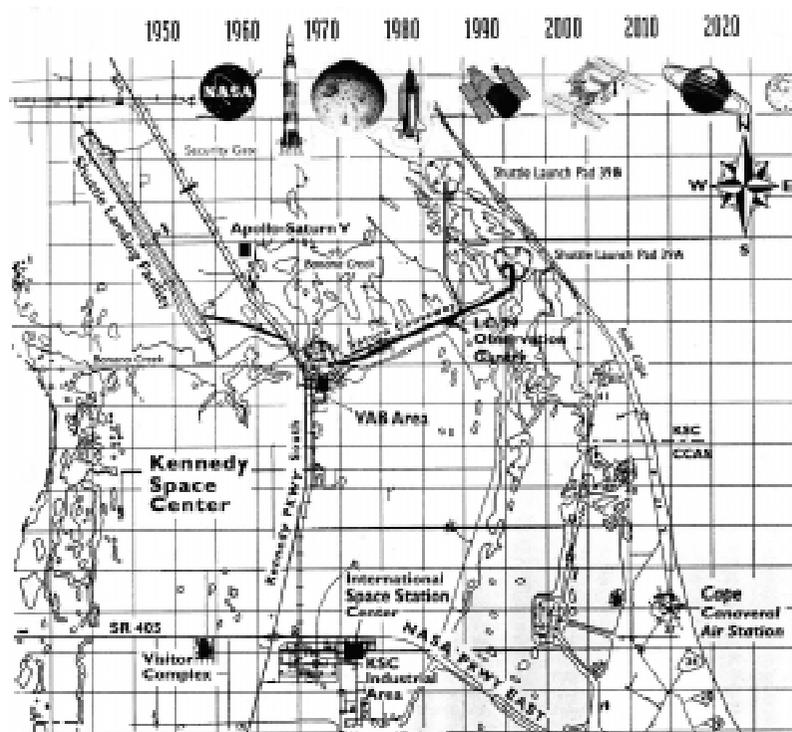
Representatives of all nations involved in the International Space Station have agreed to officially target a November 1998 launch for the first station component and to revise target launch dates for the remainder of the 43-flight station assembly plan.

In meetings of the Space Station Control Board and the Heads-of-Agency on May 30 and 31 at KSC, all station partners agreed to target launch dates of Nov. 20 for the control module (FGB) now named Zarya (Russian word for 'sunrise') from Baikonur in Kazakhstan and Dec. 3 for Shuttle mission STS-88 with Unity (Node 1) from KSC.

Although the new dates move the launch of the first station component, Zarya, to November, the target dates agreed upon for many major station milestones during the latter portions of the five-year assembly plan are little changed.

Full details of the current International Space Station Assembly Sequence, Revision D, are available in a fact sheet and may be obtained on the Internet at <http://station.nasa.gov/>

KSC's Roadmap to the year 2025: *Where we are in the journey*



Time and space are united in the roadmap to KSC's future. From NASA's formal organization in 1958 to the Hubble Space Telescope deployment, International Space Station flights and future Mars missions, our destiny depends on how we chart and stay the spaceport's course, outlined in the KSC roadmap presentation on May 29.



The crew for STS-91 arrived May 30 at KSC. They are, from left to right, Pilot Dominic Gorie, Mission Specialist Janet Kavandi, Commander Charles Precourt (at microphone), and Mission Specialists Wendy Lawrence, Valery Ryumin with the Russian Space Agency, and Franklin Chang-Diaz. Major highlights scheduled for this mission are the first Mir docking for Discovery, the first on-orbit test of the Alpha Magnetic Spectrometer and the first flight of the new Space Shuttle super lightweight external tank. Mission Specialist Andrew Thomas also is scheduled to return from Mir with the STS-91 crew.

It has been nearly a year since Center Director Roy Bridges first presented Kennedy Space Center's Roadmap of a bold plan to chart the course for the space-port's future through the year 2025.

In the time that has passed since presentation of that roadmap, designed by Bridges and his Senior Management Council (along with extensive consultation with the center's workforce, customers and suppliers), the spaceport's positive progress has been marked by external audiences as well as KSC staff.

"Last year, we established the direction," noted Bridges, "and we will continue on course. With our Implementation Plan and Roadmap, we are forging ahead to our future with confidence and competence."

In the center's steady and deliberate transition to a development role from an operations function, continual checks of the center's progress are necessary not only to stay the course, but also to meet and exceed our goals during the journey.

To assure this progress, Bridges highlighted key questions as a barometer of where we've been over the past year, where the center is currently, and the course of our direction for the future.

Are we aligned with where NASA is going?

Bridges reviewed the Agency's vision as an

(See Roadmap, Page 6)

Invest in America: 1998 Savings Bond drive kicks off June 16

The slogan of the 1998 Savings Bond Drive captures its spirit succinctly — The sky is the limit: Invest today to enjoy tomorrow.

Center Director Roy Bridges, chairman of this year's campaign, challenges NASA employees at KSC to exceed the 1997 support level. The goal of the 1998 campaign is to increase participation overall by five percent and new participation by 10 percent, as well as achieving 50 percent or more total employee participation.

This year's campaign kicks off officially on Tuesday, June 16, at 9 a.m. in the Training Auditorium. All NASA employees are welcome to attend. The two-week drive

will be from June 22 through July 3.

U.S. Savings Bonds are the world's most widely held security. Americans already hold some \$186 billion in Savings Bonds, and each year, 55 million buy more.

There are many advantages to buying U.S. Savings Bonds:

Affordability: Denominations range from \$50 to \$10,000, and the purchase price is one-half the face value. Through payroll savings, bonds can even be purchased on an installment plan with \$100 the smallest denomination.

Flexibility: Bonds can be cashed at most financial institutions any time after six months from the date of

purchase.

Safety: Bonds are backed by the full faith and credit of the federal treasury.

If lost, stolen or destroyed they can be replaced at no charge.

Tax benefits: Interest earned is exempt from all state and local income taxes, and federal tax can be deferred until the bonds are redeemed.

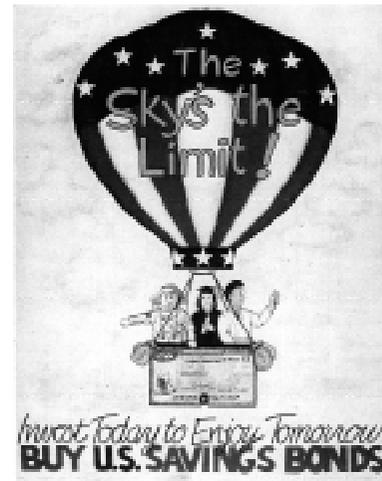
Financing education: There are special tax benefits available to lower and middle income investors.

Contact your directorate canvasser to set up a bond purchase.

Call Evelyn Johnson at 867-9834 if you need to find out who your canvasser is.

You can also check out more

information on the Internet at <http://www.savingsbonds.gov/>



This poster was created by Ethan Custer, a sixth grade student from East Grand Forks, MN. It was awarded first place in the 1997 U.S. Savings Bonds National Student Poster Contest and was selected for this year's bond drive nationwide.

Take our Sons to Work Day approaches on June 11

Kennedy Space Center will celebrate Take Our Sons to Work Day on Thursday, June 11. On this day, KSC employees are invited to bring sons or grandsons to work with them to share the work experience and encourage the boys to stay in school, study and set goals for their future.

Sponsors may bring more than one child, but only children nine years of age and older may participate. Children may not be taken to any work area requiring a controlled access badge. Employees working in these areas may arrange for another person to take the child to an approved area.

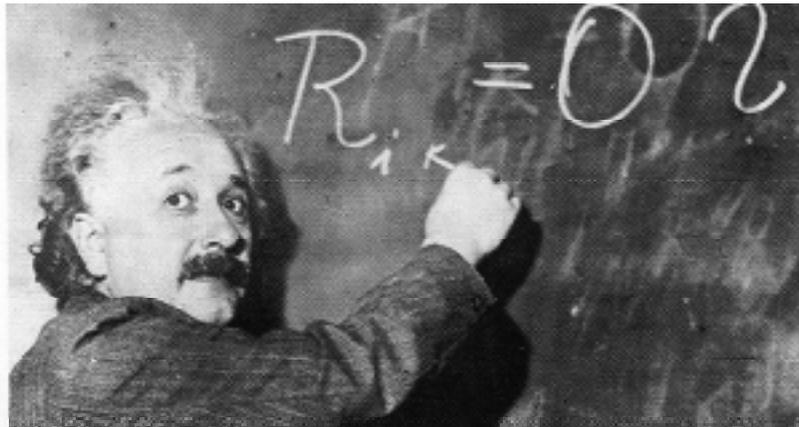
Gate 1 at Cape Canaveral Air Station (CCAS) will be open to employees bringing boys to work with them, and staff working on CCAS property may participate.

KSC contractor employees should contact their own company's Public Relations office to determine the level of participation available to them.

Due to limited seating, only NASA employees may participate in the following program:

7:30 - 8 a.m. — KSC Visitor Complex (gather in the IMAX II Theater);

8 - 9:30 a.m. — Special program for sons of NASA employees. KSC



It's all relative. Whether he's your son or grandson or nephew, stimulate a little more creative genius in him. Bring him to work June 11. This may not equate precisely with Einstein's theory of relativity, but it calculates to a greater investment in our future.

Deputy Director for Launch and Payload Processing Loren Shriver will open the program.

Then, Carlton Hall, manager of Ecological Programs for Dynamac Corporation, will speak, followed by Joey Shuh, the first place winner of the International Science Fair and a 1998 graduate of Satellite Beach High School.

All contractor and NASA sponsors and their sons may attend the second program at the Visitor Complex.

Beginning at 9:30 a.m., there will be a robotics demonstration by Steve Van Meter, a NASA hazardous duty robotics specialist. The demonstration will take place

between the Galaxy Center and the pond by the Astronauts Memorial.

The KSC Visitor Complex Spaceman will also be available at this location as a photo opportunity.

In addition, a special equipment display will be set up in the parking lot behind the Headquarters Building from 7:30 a.m. to noon.

Some of the equipment on display will be a fire truck, an ambulance, a helicopter, and a SCAPE van. A patrol unit, the special response team and a K-9 unit will provide demonstrations.

Special Take Our Sons to Work Day badges will be distributed, and NASA employees may pick up their badges on June 8, 9, and 10

between 10 a.m. and 2 p.m. in Headquarters, Room 2331. Contractor employees should contact their own representatives to obtain badges.

Children must wear their badges and be with a badged employee at all times while on the center. The sponsor is responsible for the children they bring; a child may go with another person to a different work site, but ultimate responsibility remains with the sponsor.

If you have questions regarding Take Our Sons to Work Day, contact Jean Rhodes at 867-2307.



The world is but canvas to his imagination. Open up a whole new world for your son. Bring your boy, aged nine years or older, to KSC for the day on Thursday, June 11.

Local high school and college students think Shuttle experiments are a 'GAS'!



Napoleon Carroll

Nap Carroll named Chief Financial Officer

Napoleon (Nap) A. Carroll has been named KSC's new chief financial officer (CFO), effective May 11.

As CFO, Carroll directs the development and implementation of KSC's resources and financial management systems and processes.

He also serves as the principal advisor to the center director on all financial activities and oversees the development and administration of financial and resources management systems.

Prior to his selection to this position, Carroll served in the Senior Executive Service Career Development Program as the acting chief financial officer at the Stennis Space Center in Mississippi and also was on detail to the director of Financial Management for NASA Headquarters.

Previously, he served as chief of the Shuttle and Engineering Development Resources Management Office supporting the KSC Shuttle Processing Directorate, the Shuttle Logistics Directorate and the Engineering Development Directorate.

Carroll started as a cooperative education student at KSC in 1973.

He has received numerous awards, including the KSC Equal Opportunity Award and a NASA Exceptional Service Medal.

Five Brevard Community College (BCC) students helped prepare a payload flying aboard the Space Shuttle Discovery on mission STS-91. The students are the first from the sunshine state to participate since the Get Away Special (GAS) program began in the early 1980s.

The experiment, dubbed G-743, will measure the effect of radiation on deoxyribonucleic acid (DNA) and mustard seeds, riding inside a metal cylinder about the size of a pickle barrel.

Students from BCC, DeLaura Junior High School in Satellite Beach, Broward Community College, Texas A&M University and Belen Jesuit Preparatory School are collaborating on it.

Four of the five BCC students became involved through an Introduction to Space Systems Technology class this semester. The

local course is an overview of space systems, space environment, launch vehicles and technology needed for a mission.

Cosmic and solar radiation could have drastically different results in altering DNA than radiation received through Earth's protective atmosphere. There is still much to be learned about radiation in space, such as the possibilities of premature aging and cancer.

Texas A&M University designed the actual DNA experiment. The university provided 56 sealed cuvettes with DNA samples from humans, chickens, fish and salamander.

Students in a lab at the university will reproduce conditions on orbit — such as shaking, freezing, and thawing — to keep an Earth-bound group of

(See Students, Page 8)



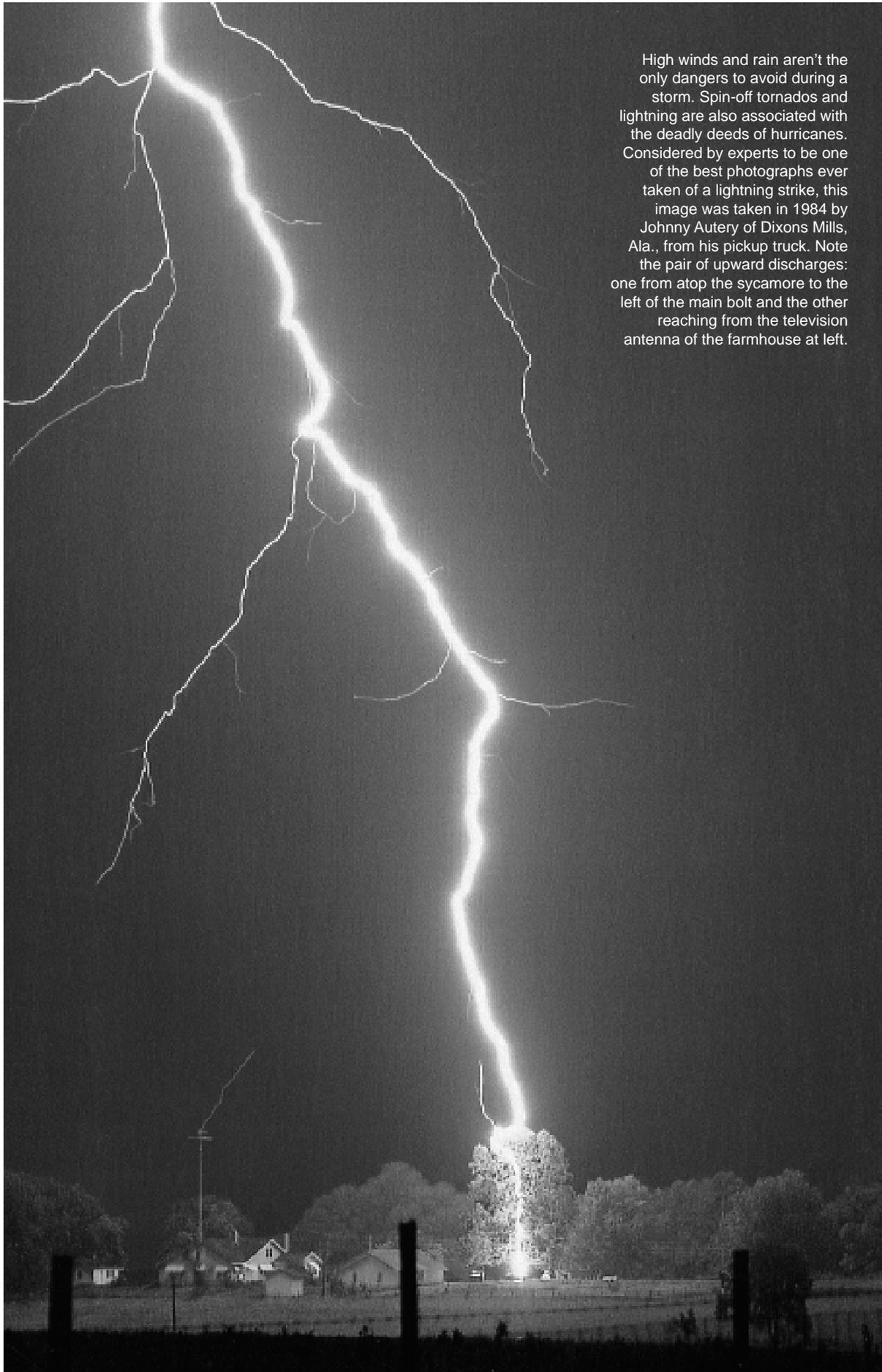
Two Get Away Special (GAS) canisters await their flight on STS-91 after installation into Discovery's payload bay. At right is G-743, an experiment sponsored by Brevard Community College, Broward Community College, DeLaura Junior High School in Satellite Beach and two other schools to test DNA exposed to cosmic radiation.

June employees of the month



Honored in June, from left to right, front to back, are: Bridgett Mack, Advanced Development and Shuttle Upgrades; Leslie Kelley, Chief Financial Officer's Office; Lee Furis, Administration Office; Jan May, Biomedical Office; Joe Beardall, Space Station Hardware Integration Office; Michael Generale, Payload Processing; Joe Powell, Safety and Mission Assurance; and Bill Haase, Installation Operations. Not shown are Oscar Brooks, Checkout and Launch Control System Office; Pete Marciniak, Logistics Operations; Pam Bookman, Engineering Development; and Andrew Kelly, Shuttle Processing.

weather this season...



High winds and rain aren't the only dangers to avoid during a storm. Spin-off tornados and lightning are also associated with the deadly deeds of hurricanes. Considered by experts to be one of the best photographs ever taken of a lightning strike, this image was taken in 1984 by Johnny Autery of Dixons Mills, Ala., from his pickup truck. Note the pair of upward discharges: one from atop the sycamore to the left of the main bolt and the other reaching from the television antenna of the farmhouse at left.

Surf the Web before the storm!

Tropical storms and hurricanes may spawn and thrive thousands of miles away, but keeping close track of them is only a few mouse clicks away. While the Internet is no substitute for radio and television updates, a personal computer can provide a wealth of tropical weather information during hurricane season.

Some of the best Web sites are:

The **National Hurricane Center's** Tropical Prediction Center's site has the latest information on hurricanes and tropical storms:
<http://www.nhc.noaa.gov/>

The **National Weather Service's** Melbourne office displays information about the local weather and tropical storm development:
<http://sunmlb.nws.fit.edu/>

The **Hurricane Storm Tracking Atlantic and Pacific Oceans'** site has historical information about the tracks that tropical storms have taken:
<http://hurricane.terrapin.com/>

Colorado State University sponsors a page that details both history and forecasts:
<http://typhoon.atmos.colostate.edu/forecasts>

The **American Red Cross** has a safety page with downloadable materials on disaster supplies, emergency preparedness, evacuation plans, and more:
<http://www.redcross.org/disaster/safety/down.html>

The **Federal Emergency Management Agency** in cooperation with **Lowe's Home Improvement Warehouse** co-sponsors a page for the 1998 storm season tracking:
<http://www.storm98.com/>

Florida State University's meteorology department's tropical weather page provides more information on hurricanes and tropical storms from experts:
<http://www.met.fsu.edu/explores/tropical.html>

The **University of Michigan**-based page is for the true hurricane aficionado. Find plotted tracks of storms as well as historical data of past storms, with different color tracks denoting different storm strengths. Archive satellite photos are also available:
<http://cirrus.spri.umich.edu/wxnet/tropical.html>

Roadmap ...

(Continued from Page 1)

investment in America's future, stressing the values of "people, excellence and integrity" as the keys to its success.

Answering fundamental questions from the NASA Strategic Plan, such as "Does life in any form exist elsewhere than on Earth?" will provide real value to the American and global public.

Implementing NASA's strategies through KSC's own Roadmap "helps the Agency advance space exploration and commerce," Bridges said.

"Through our guiding principles, we will assure that the means we use to reach our goals are the most appropriate."

How are we doing?

According to one of the leading international ISO certification organizations, Det Norske Veritas (DNV), the nation's spaceport is doing great!

KSC recently was recommended for certification with the International Standards Organization (ISO) 9001 standard, pending DNV acceptance of a KSC plan of action to correct seven minor non-conformities, the fewest of any NASA center to date.

Several of the non-conformities have already been corrected since the auditors' visit May 11 through 15.

"This represents a huge effort for Kennedy Space Center," noted Bridges, "and a key milestone for the center and for the Agency. It is a basis for us to continually improve the way we do business."

Part of that improvement over time

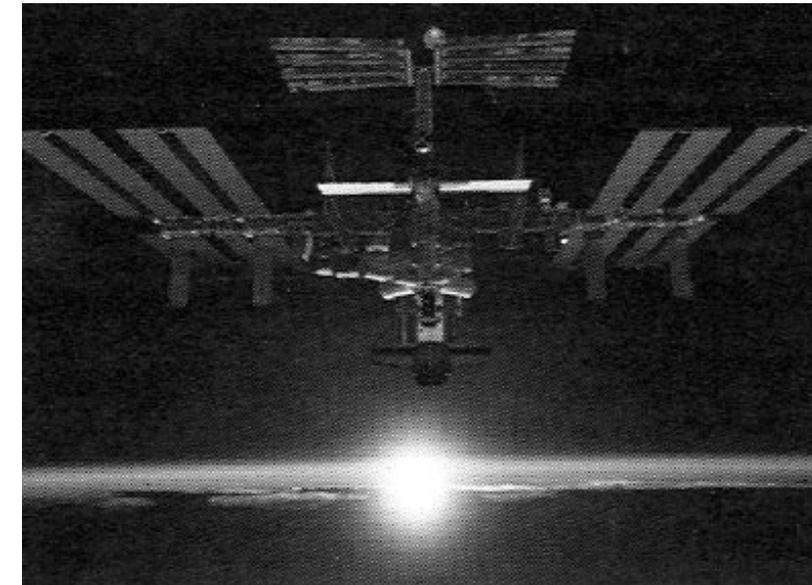
includes KSC's Goal Performance Evaluation System, or GPES. This system includes the development of meaningful performance plans; links employee performance to center outcomes; and aligns employee plans with the Agency's strategic objectives.

Shuttle Upgrades

Today, KSC's role in lead and support of Shuttle upgrades is providing major contributions to NASA's plan to assure safe and continuous operation of the Shuttle fleet and to incorporate major improvements.

One important Shuttle upgrade project in which KSC plays a key role is the Integrated Vehicle Health Monitoring System, designed to reduce planned ground processing work, streamline unplanned work, enhance visibility into orbiter systems operation and improve vehicle safety. Other KSC teams are working on proposed Shuttle upgrades varying from liquid flyback boosters and less toxic waterproofing for Thermal Protection System tiles to a new payload carrier.

Reducing turnaround time in ground processing will be particularly important as the Shuttle fleet prepares for more flights per year in the next century.



The International Space Station will be the largest and most complex international peace-time cooperative science and engineering project ever attempted.

Laboratory in California and Goddard Space Flight Center in Maryland, developing new approaches for payload processing to reduce cycle time and improve payload design.

Safety and Mission Assurance

KSC senior managers were the first NASA KSC employees to participate in safety training presented Sept. 17 by one of the world's safest companies, DuPont.

With this start of an innovative safety program at KSC, the center's goals include zero injuries and damages. Safety is good business at KSC; a review of KSC on-the-job lost work hours shows that the center is well below the industry average, yet still not as good as DuPont's record.

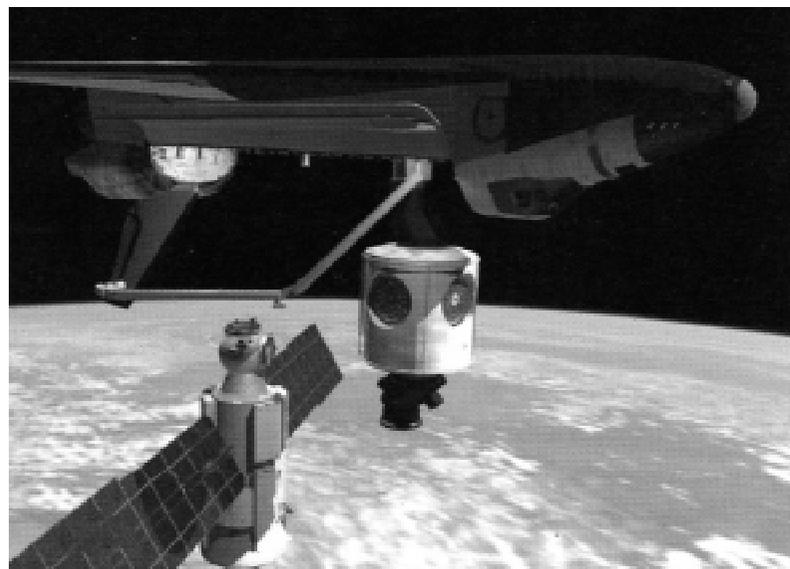
Quality

The center plans to move from oversight and inspection of contractors to "insight and process analysis," building quality into our products to reduce cost. The past year has witnessed our reducing government mandatory inspection points (MIPs) by 30 percent from Shuttle and 50 percent out of payloads. The plan is to further reduce Shuttle MIPs by 45 percent.

Reusable Launch Vehicles

The goal of the reusable launch vehicle (RLV) program is to improve U.S. competitiveness in the worldwide launch market by increasing reliability and lowering the cost of space access to \$1,000 per pound of payload.

"Our potential customers are evolving from a stance of *why* at KSC to *when* at KSC," Bridges pointed out.



The first International Space Station assembly flight will be highlighted by the mating of the Russian-built Control Module, suspended above the orbiter Endeavour's payload bay to the conical mating adapter at the top of the U.S.-built Node 1, now named Unity (center), using the orbiter's mechanical arm.

Expendable Launch Vehicles

In 1997, KSC was assigned lead center responsibility for NASA's acquisition and management of expendable launch vehicle (ELV) launch services. Transition plans got underway with scheduled completion by the end of Fiscal Year 2002.

The KSC ELV team has enhanced its partnerships with NASA's Jet Propulsion

(See Roadmap, Page 7)

Roadmap ...

(Continued from Page 6)

Center of Excellence

The space center's unique capabilities and expertise were recognized by NASA when it designated KSC as the Center of Excellence for Launch and Payload Processing Systems.

KSC's plans to establish a Center of Excellence team have resulted in three technology banners for the spaceport and 11 technology growth areas.

The three banners are:

- ❑ Spaceport architecture and operations development;
- ❑ Environmental and bioregenerative systems; and
- ❑ Integrated intelligent testing and simulations.

Defining requirements for maintaining critical success factors is planned for KSC in order to focus our development and build effective future leadership, Bridges said.

What does it mean for KSC to be a development center?

"The value of our knowledge of operational flight hardware and expertise in processing, integrating, testing and launching space systems has earned KSC the reputation as world class in our industry," Bridges noted.

"We're not taking any roles from other centers, rather we're adding value based on our demonstrated expertise in these areas."

Examples of this include KSC's groundwork in processing the International Space Station; the new Checkout Launch and Control System; design and develop-

ment work for the X-33, X-34, and X-38 vehicles; GPES, and more.

"As an active development partner with other NASA centers and industry, NASA at KSC will bring knowledge and value to the customer, generating new business for the spaceport and increasing customer satisfaction," Bridges added.

Feedback from X-34 launch vehicle developer, Orbital Sciences Corporation (OSC), has validated this statement.

According to OSC, KSC is doing real development work now and delivering on its promises.

How will we know when KSC is an active development partner?

In the short term, customers will know the value of KSC's unique capabilities and want America's spaceport to help them.

In the long term, KSC will be funded as the primary source and be a visible partner in customers' plans.

A significant portion of KSC civil service full-time staff will consistently be working on high priority NASA/customer development efforts.

What challenges do we face?

It is important to realize that in the face of many challenges, NASA is committed to not having a reduction in force through the year 2003 in order to meet its goals.

Projected needs versus availability, however, leaves a skill mix imbalance where KSC will need to revitalize key

areas in order to bid and win multiple projects.

"We're interested in getting results," Bridges said, "so we need to make the right investments and focus our resources wisely in order to bring more business to KSC."

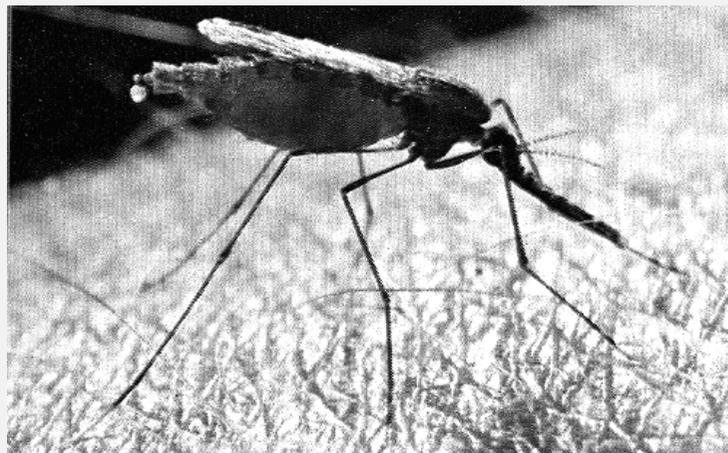
What do we need to do next?

Through 2001, KSC will invest 10 to 25 percent of its civil service workforce in development efforts.

"Basically, we as a center need to understand the significance of our role in development, commit to it, listen to our customers' needs, and act," Bridges summarized.

"Everyone needs to identify ways to improve KSC, build and improve upon his or her own capabilities, and align actions with NASA strategies. By staying this course, we will build upon the successful progress we've made in the past year."

Don't be bugged by Floridian flies, fleas, and flora



There are better ways of donating blood. Don't let any of Florida's 67 species of mosquitos bug you this summer. The best protection is prevention, but you should also be aware of how to treat poisonous bites, stings, and plant infections.

Life in Florida offers many fun-in-the-sun activities. Along with a dizzying array of recreational outdoor events, however, are even more insects, animals, and plants that can quickly put a damper on your day.

The variety of Floridian insects is staggering. There are 67 species of mosquitos alone. Poisonous black widow and brown recluse spiders add to the hazards of potentially harmful bug bites.

Five species of poisonous snakes infest our area as well, sharing the ground with fire ants, stinging caterpillars, alligators, and dangerous marine life. Some of these creatures make their homes among poisonous trees, plants and weeds.

Don't let any of this stop you from enjoying the great outdoors. The best way to protect yourself and your loved ones is with knowledge.

Be aware of the hazards, know how to avoid them when possible and learn what to do if you or someone else is bitten or stung by an insect or snake or has contact with (or ingests) a poisonous plant.

Pick up the free June information packet offered through KSC's Health Education and Wellness Program. Tips on prevention and first aid are included, along with facts on harmful animals, insects, and plants.

Packets are available at all medical facilities or call Carol Roth at 867-3414.

**Our potential customers are
evolving from 'why at KSC'
to 'when at KSC.'**

— Roy Bridges

Super Safety Day at America's spaceport

In keeping with our guiding principle of safety and health first, all of KSC will observe Super Safety Day on Thursday, July 16.

This day is being set aside for all KSC employees (civil service and contractor) at the center to focus on important safety and health issues. All normal work activities, with the exception of mandatory services, such as fire and security, will be suspended to allow all staff to attend KSC's Super Safety Day activities.

The theme for this special day is *Safety on the Line*, which means each one of us is on the line every day to ensure safety is not compromised.

The KSC safety culture mandates that safety is everyone's responsibility, and the line organizations are assuming responsibilities previously considered exclusively Safety Office functions.

Super Safety Day ceremonies will begin with a keynote speaker and a live panel discussion involving NASA and contractor managers. An employee question-and-answer period will follow.

The morning event will be broadcast throughout the entire center for all employees to view.

"I consider this activity very important in raising the awareness of individual safety responsibility," said Center Director Roy Bridges,

"thereby moving us closer to our goal of zero incidents and injuries. Everyone's participation is required to derive the maximum benefit for our employees."

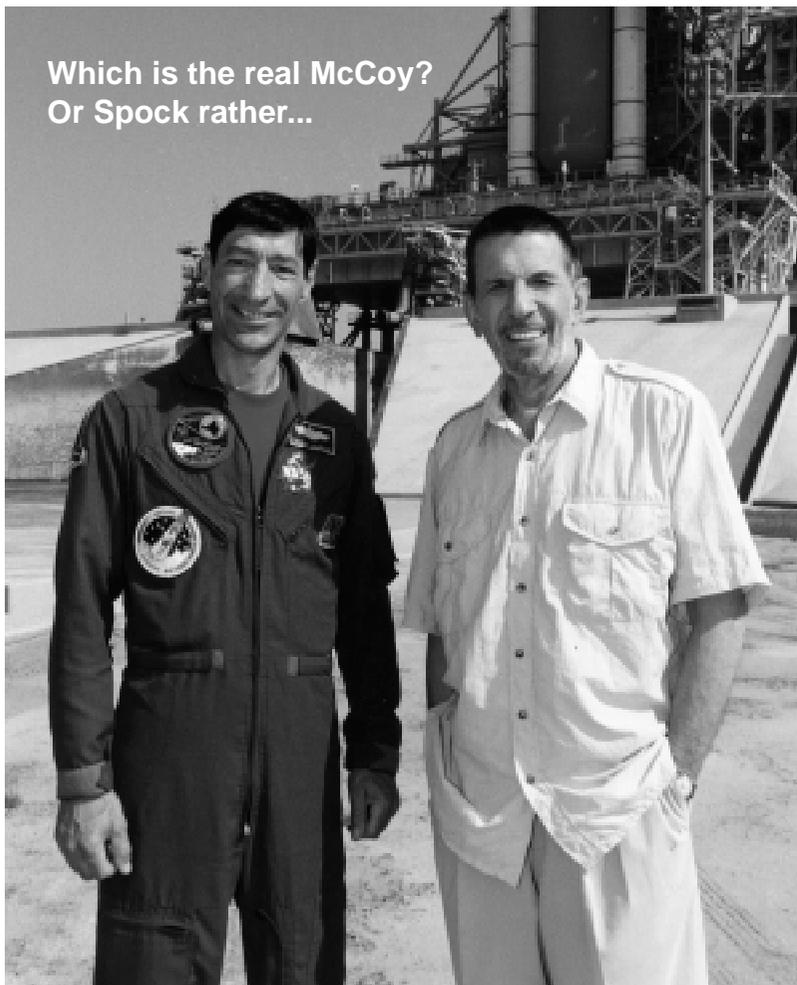
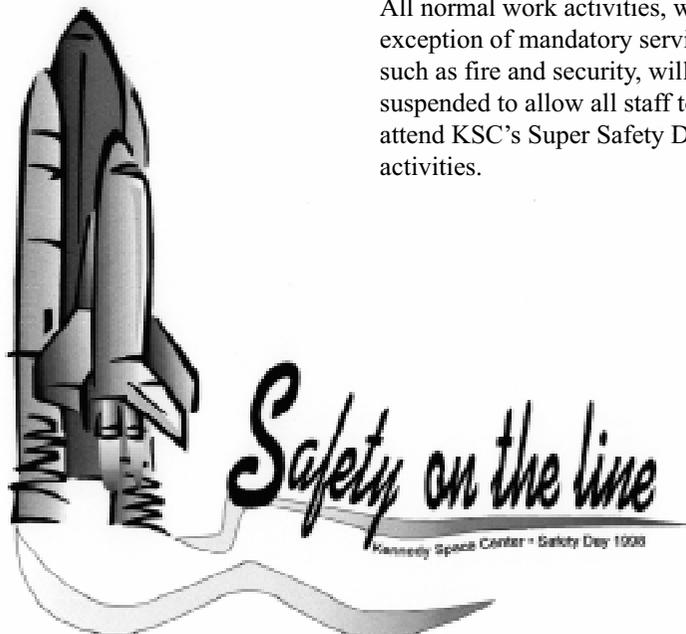
Special exhibits regarding safety and health featuring a number of specialty vendors will be available at various venues.

Employees will have the opportunity to review specific safety and health concerns within their individual work units during the day.

Super Safety Day is a unique opportunity for everyone to focus on safety and health concerns both on and off the job.

If you have questions about Super Safety Day, contact Associate Director of Safety and Mission Assurance Al Sofge at 867-7390.

Remember, safety is your responsibility.



Which is the real McCoy? Or Spock rather...

Leonard Nimoy (right) recently trekked to America's spaceport as part of a project for an upcoming ABC Television documentary about asteroids. The informational program, scheduled to air in July, will include interviews with top NASA scientists from the Jet Propulsion Laboratory and Ames Research Center. Nimoy's visit to KSC included a tour by Astronaut Mario Runco, seen here standing with Nimoy (who played the Vulcan Mr. Spock on Star Trek) in front of the Space Shuttle Discovery at Launch Pad 39A.

Students ...

(Continued from Page 3)

samples consistent with the GAS can on-board, allowing researchers to better isolate the effects of radiation.

The experiment is called GRaDEx, which stands for Genotoxicology and Radiation Dosimetry Experiment. Seven of the cuvettes contain a badge that uses photographic gel to measure radiation doses.

"The first payload manager of the first German GAS can is now vice president of Daimler Benz

Aerospace," noted Assistant Professor of Physics and Astronomy Rolando Branly, who leads the group of Broward Community College students.

"That gives you an idea what the experience does for people," he said. "When students go to the space center, they never forget it. They see that science is not just a set of procedures, but an entire culture."

The GRaDEx experiment is but the beginning. A larger project named the Terrestrial Atmospheric Multi-Spectral Explorer (TAMSE) is now in the planning stages.



John F. Kennedy Space Center

Spaceport News

The *Spaceport News* is an official publication of the Kennedy Space Center and is published on alternate Fridays by the Public Affairs Office in the interest of KSC civil service and contractor employees.

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